Everglades Restoration Transition Plan – Phase 1

SFWMD Governing Board

13 October 2010

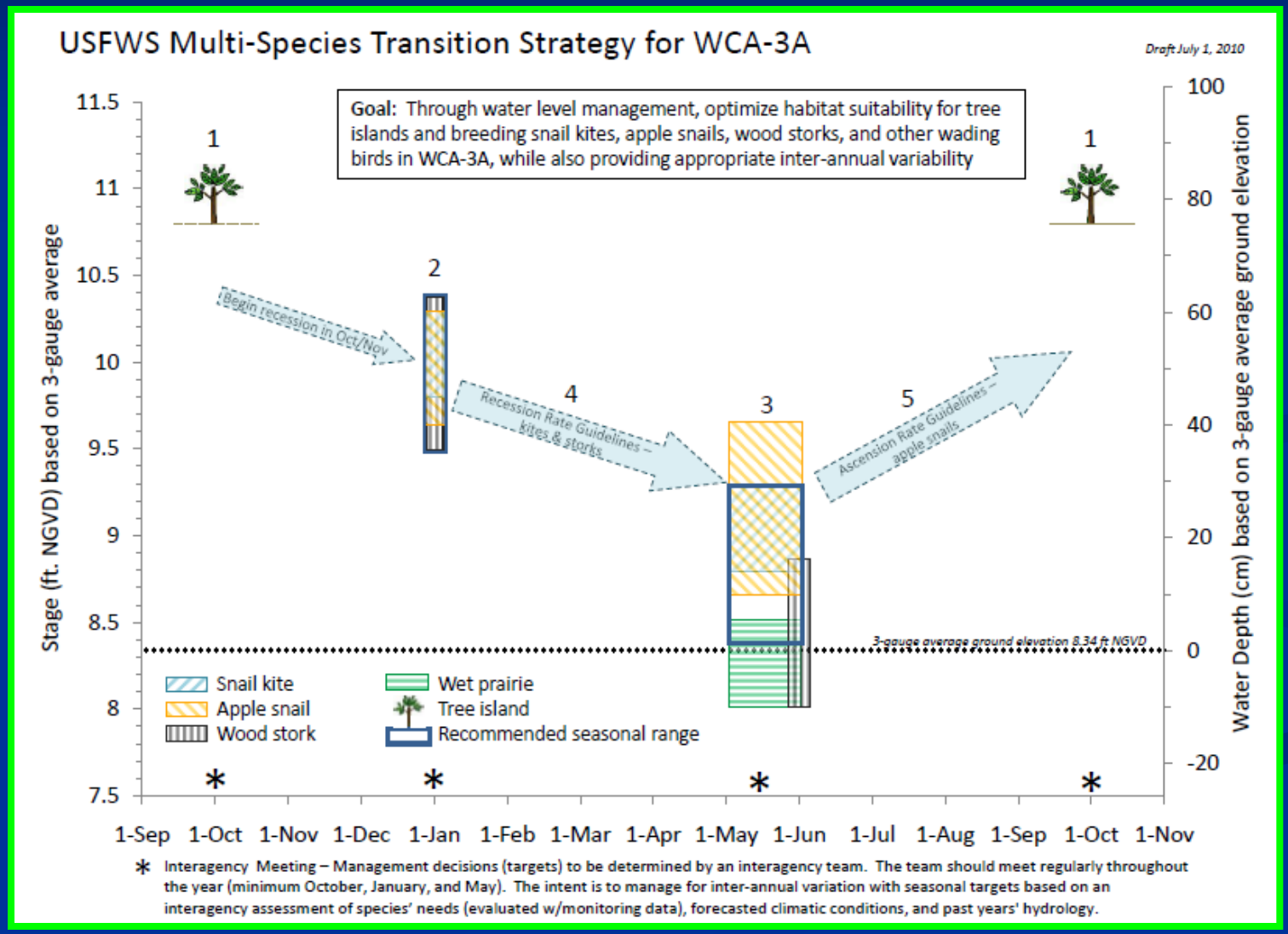
ERTP Objectives

- To improve conditions for the Everglade snail kite, wood stork and other wading birds and their habitats in WCA-3A
- To maintain nesting season requirements for the Cape Sable seaside sparrow
- To maintain other C&SF project purposes

ERTP Process

- ERTP is an ESA consultation with FWS
- Affected agencies were included in meetings in effort to address their concerns prior to release of NEPA documents
- Meetings between USACE and FWS returned to consultation protocol, with periodic informational briefings to agencies, due to time constraints

FWS Multi-Species Transition Strategy



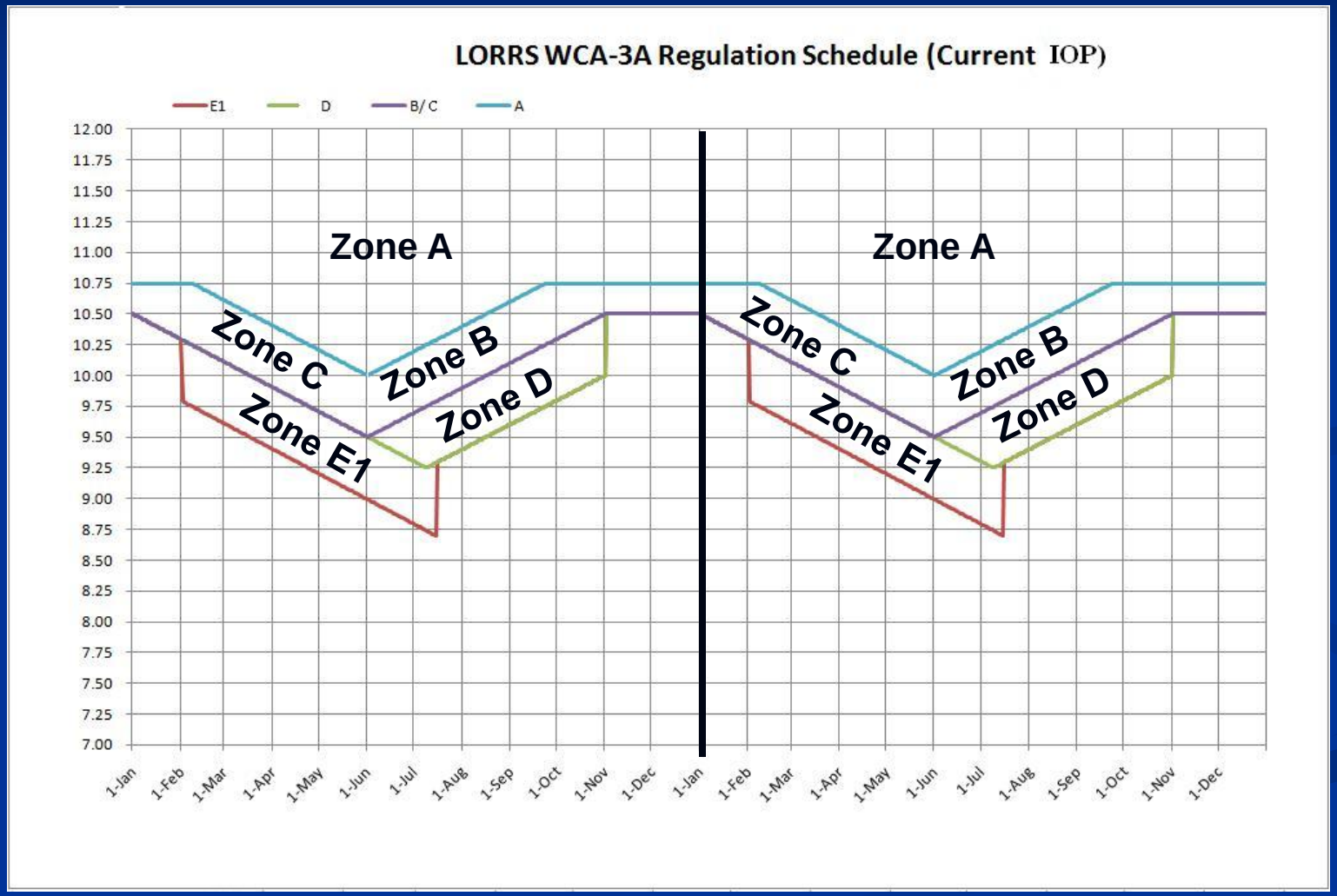
ERTP Paradigm Shift

- USFWS developed a Multi-Species Transition Strategy for WCA-3A
- ERTP Includes Consideration of New Information
  - Current climate conditions
  - Project specific performance measures
  - Observed species data (1998-2009)
  - Periodic Scientist Calls
  - WCA-3A Spreadsheet Analysis (based on PSC recommendations and current climate conditions)

Final Array for Analysis
SFWMM 2x2: Version Used

- USACE SFWMM Modeling first initiated in July 2010 as an investigation of the potential effects of lowering WCA-3A regulation schedule
  - Investigation scope was not envisioned as part ERTP at that time
- USACE guidance received on 17AUG10: Lowering the top of the WCA-3A regulation schedule was to be incorporated as interim criteria via ERTP
  - WCA-3A design changes and increased SPF stages documented in 09SEPT10 Memorandum from USACE Water Resources Engineering Chief
  - Original ERTP scope (Spring 2009-Aug. 2010) did not include SFWMM modeling of alternatives; no prior effort was undertaken to plan with USACE/IMC for this possibility
  - SFWMM modeling for ERTP completed in ~1.5 weeks to meet project schedule
- Version 5.5.2.2 (Unix), as used for LORRS modeling (2006)
  - Valid SFWMM tool was utilized, enabling relative comparisons

IOP Regulation Schedule



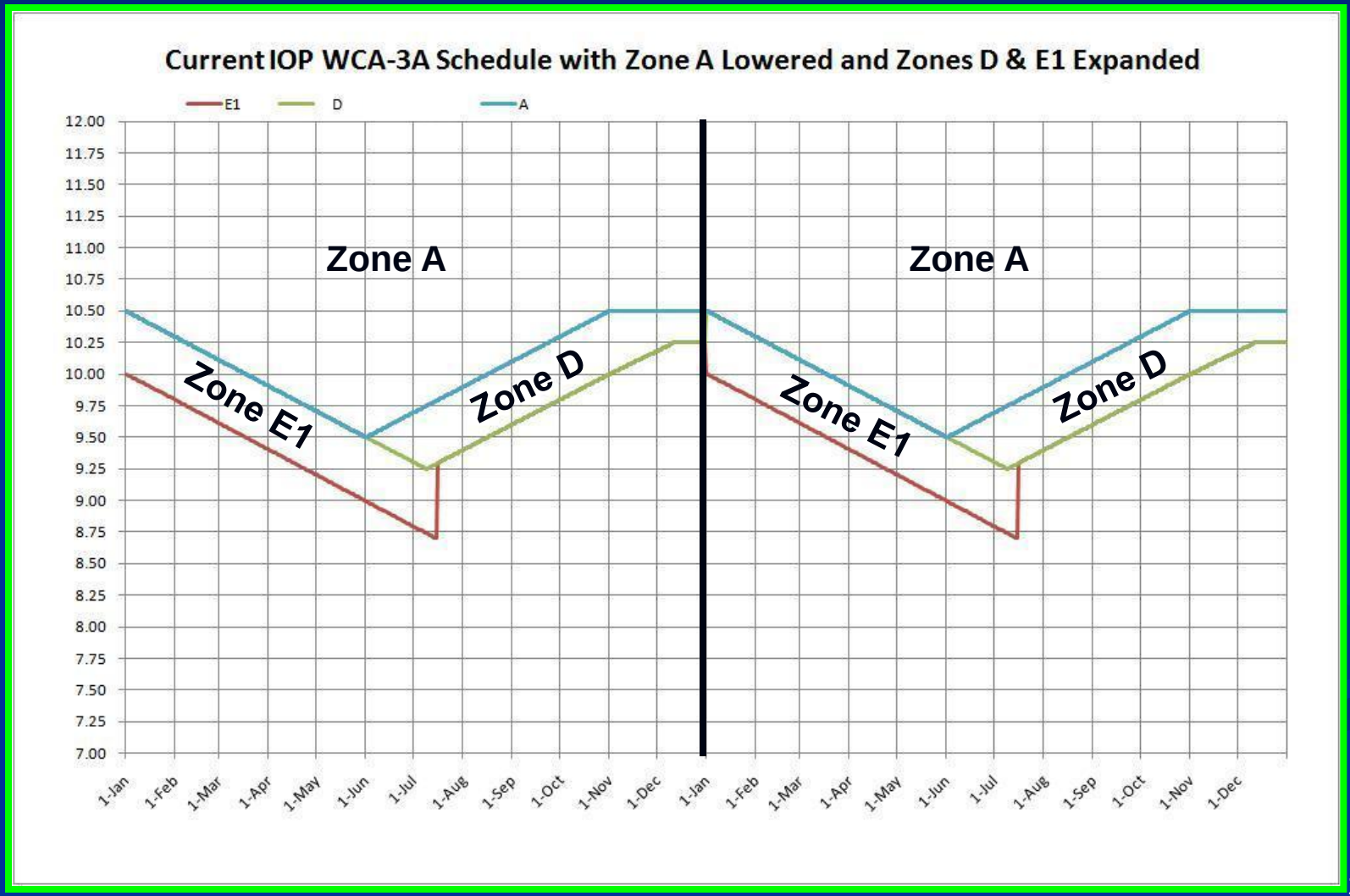
SELECTED PLAN
Alternative: Run 9E1

- Similar to IOP Regulation Schedule, with the following exceptions:
  - Revised Regulation Schedule – Zone A at 9.5/10.5
  - Zone D expanded forward to 31 December;
  - Zone E1 expanded backwards to 01 January
- IOP closure dates for S-12A and S-12B
- No closure dates for S-12C and S-12D
- S-151 regulatory releases in zones A, D and E1

SELECTED PLAN
Alternative: Run 9E1

- S-343A&B, S-344 maintain IOP seasonal closure periods
- Increased S-333 flow targets into NESRS during the dry season (80% to east, 20% to west)
- Tram Road stoppers
- S-346 open when S-12D is open for Rainfall Plan targets
- WCA-3A regulatory coefficient increased to 5000 cfs/foot above the base of the lowest regulatory zone (July-December)
  - IOP includes regulatory coefficient of 2500 cfs/foot (January – December)
- No inclusion of C-111 marsh operations restrictions
- Maximum WCA-3A stage for Lake O. regulatory releases to WCA-3A when Lake O. stage above the low sub-band set at 10.5 ft NGVD
  - IOP cuts off Lake O. inflows to WCA-3A when WCA-3A stage exceeds 10.75
- Manage for MSTS Recession and Ascension Rates
- Periodic Scientist Calls

SELECTED PLAN
Regulation Schedule



Spreadsheet Analysis

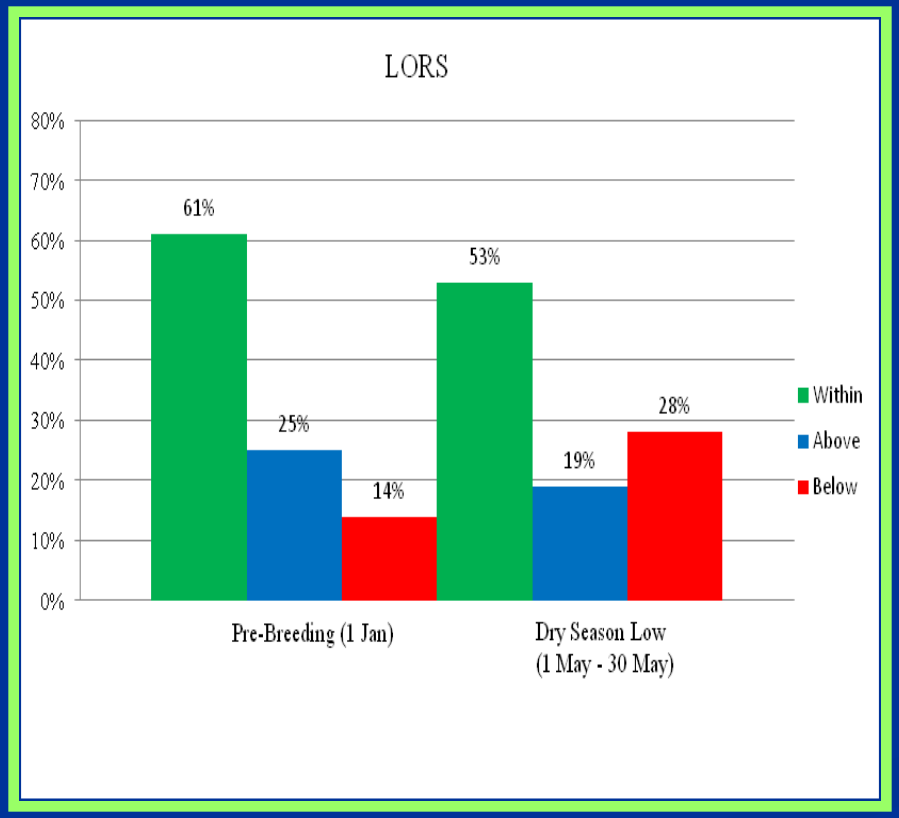
- Spreadsheet was not utilized in determination of Selected Plan
- Spreadsheet will be utilized to further define ERTP operational flexibility for the Selected Plan, to allow adaptive management of WCA-3A recession rates for the benefit of protected species
  - Based upon Periodic Scientists Call recommendations, including MSTS considerations
  - Analysis will be fully documented in the ERTP EIS
- Spreadsheet does show potential flexibility, but must be based on Periodic Scientists Call recommendations and hydrologic conditions

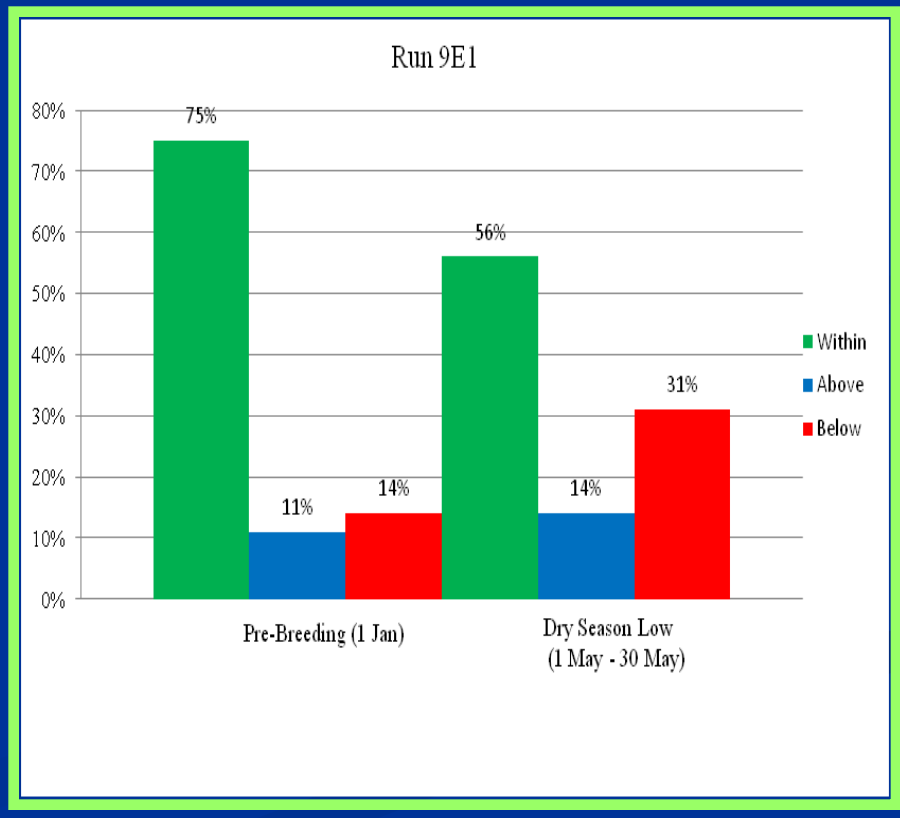
Ecological Measures

- Ecological Performance Measures developed for the ERTP project
- Selected Plan was chosen based on ecological performance as compared to other Alternatives
- This presentation provides a representative overview of the analysis completed

SFWMM Model Run Results: MSTS Depths

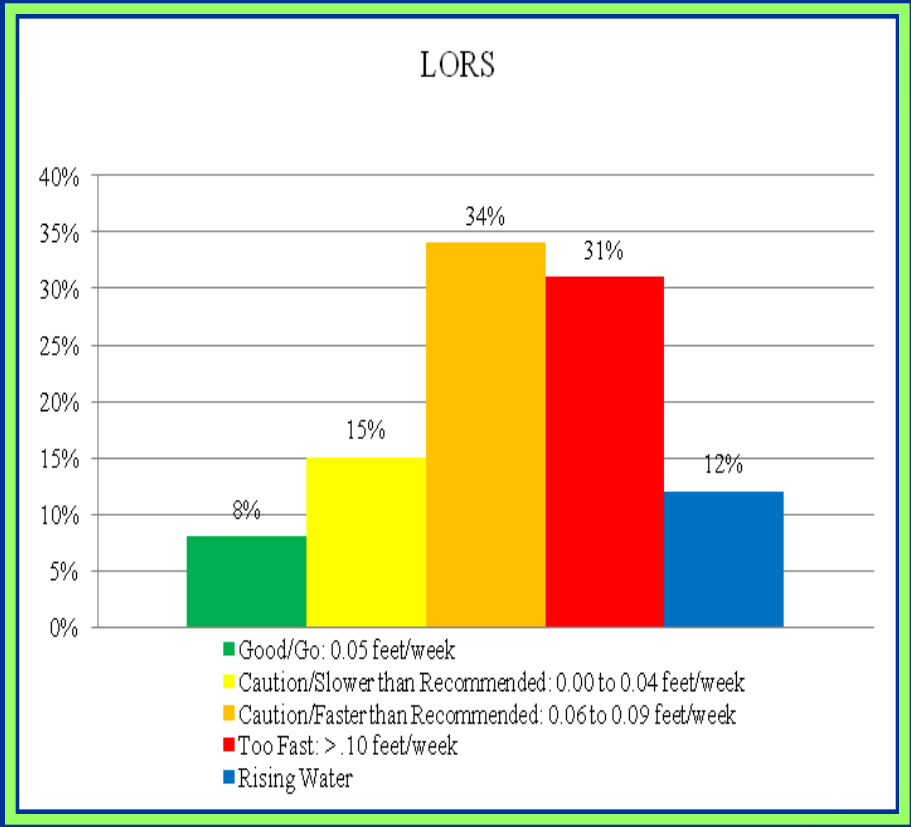
Percentage of Years in which WCA-3A water depths are within, above or below the FWS Multi-Species Transition Plan recommended depth range.

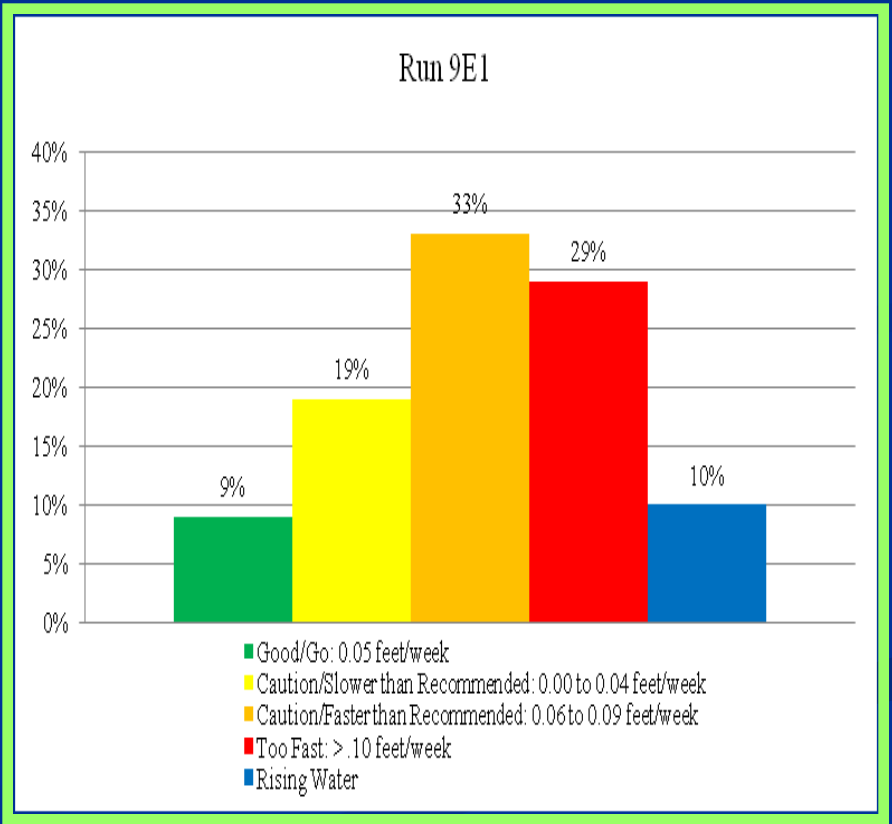




SFWMM Model Run Results: Snail Kite

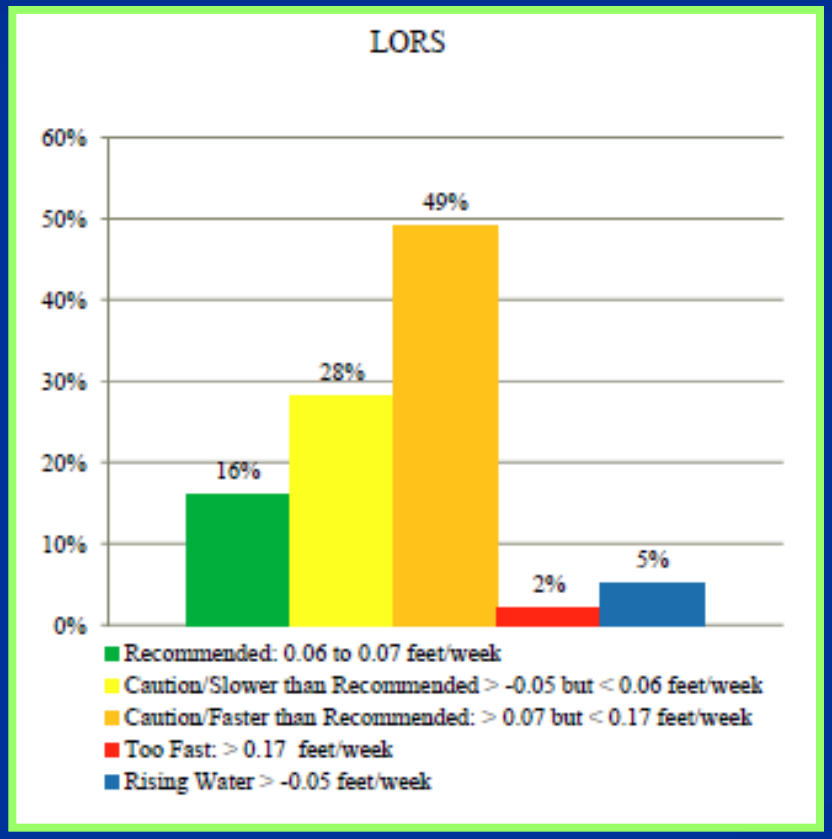
Percentage of Months when the WCA-3AVG January 1 to June 1 Average Weekly Recession Rate was within the Recommended Range for the Snail Kite. (N=180)

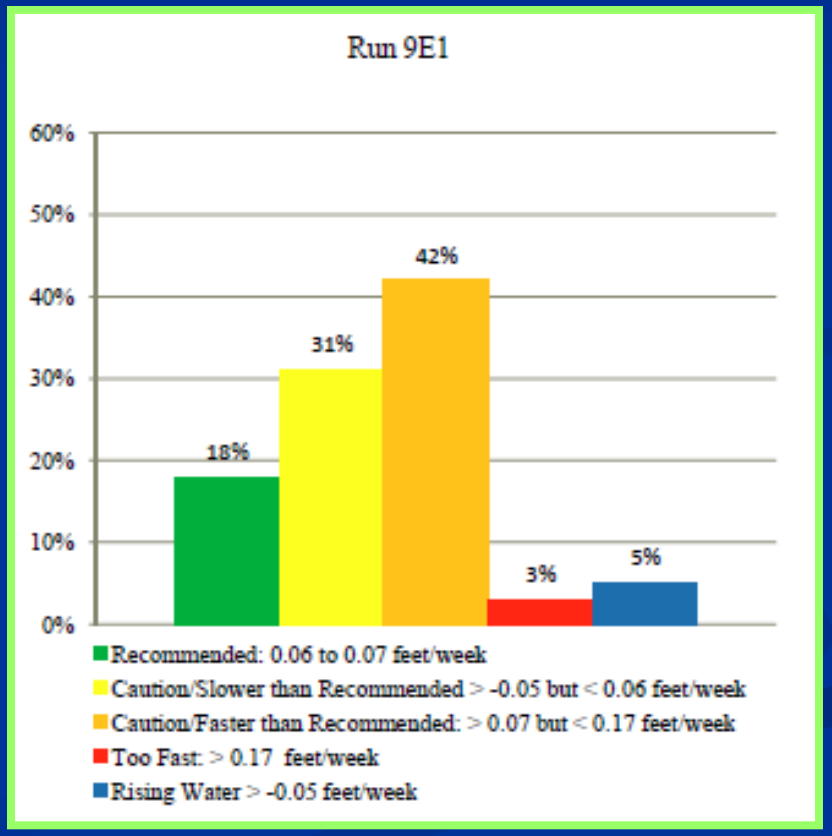




SFWMM Model Run Results: Wood Stork

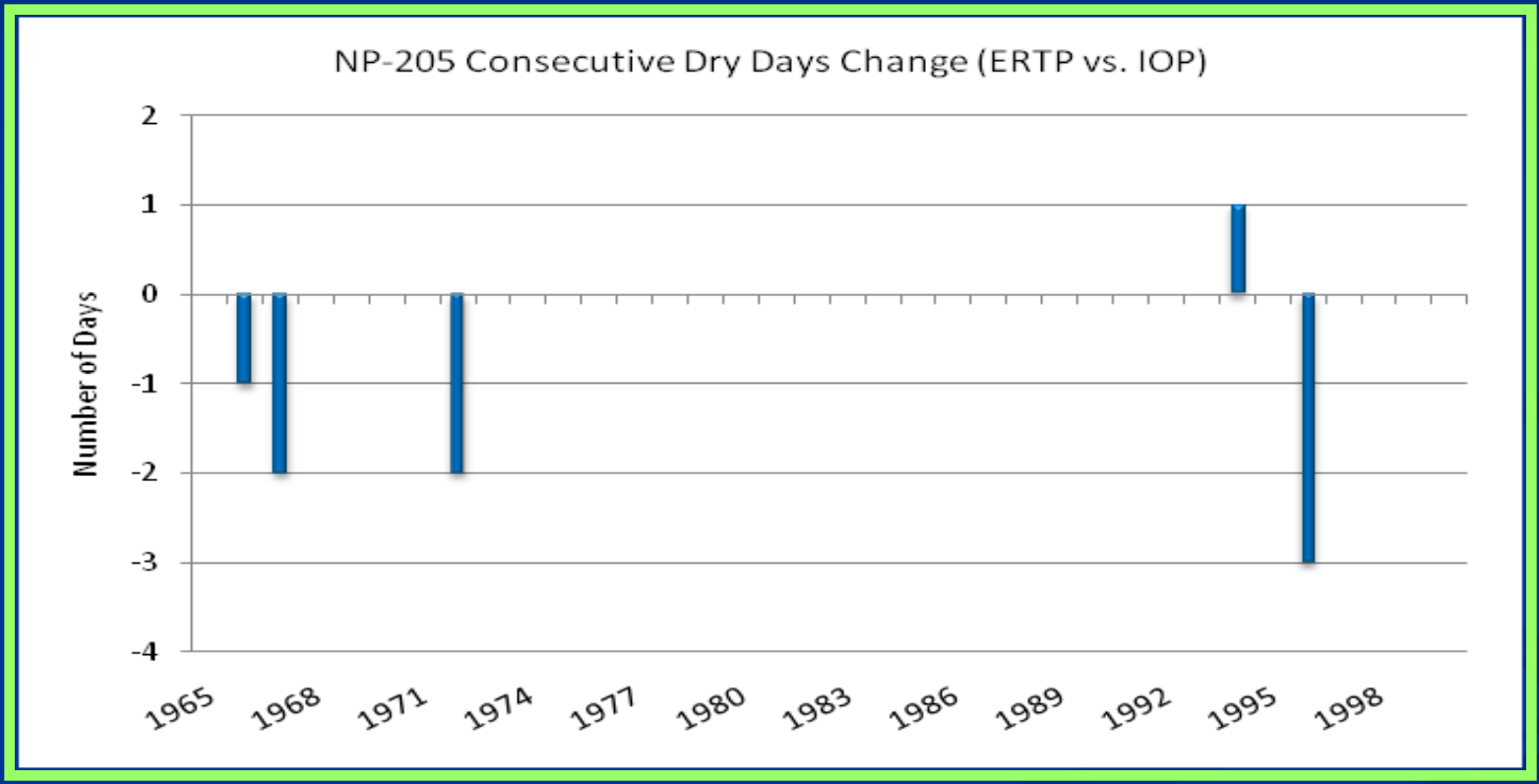
Percentage of Months when the WCA-3AVG January 1 to June 1 Average Weekly Recession Rate was within the Recommended Range for the Wood Stork. (N=180)





SFWMM Model Run Results: CSSS-A

Change in NP-205 number of consecutive dry days during the CSSS nesting window (March 1- July 15) with implementation of ERTP-1. Blue bars represent the change in the number of consecutive dry days at NP-205 as compared with IOP.



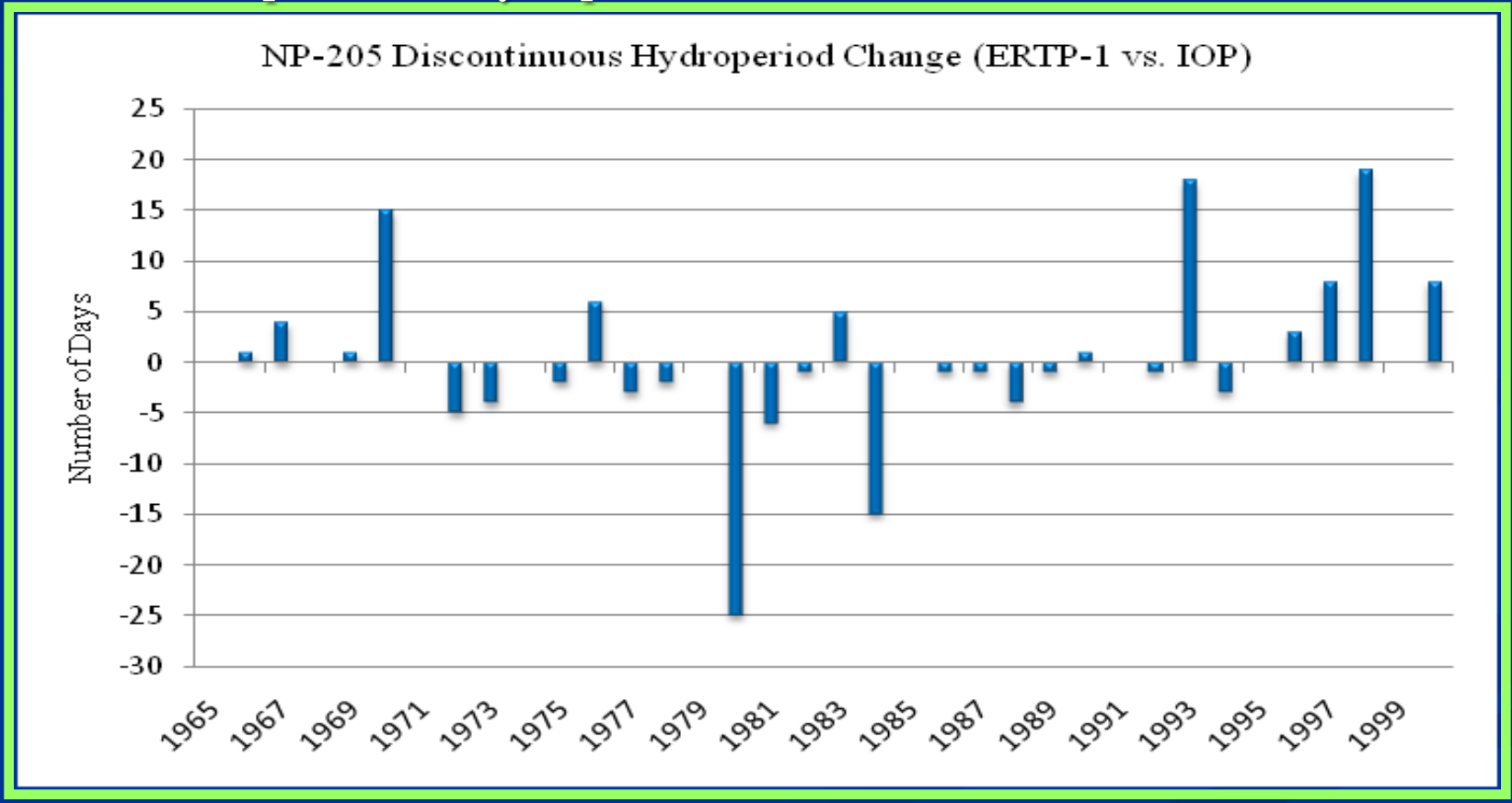
FWS RPA MET?
1 Year Difference: 1996

IOP: 67% of Years
IOP= 60 days

ERTP: 64% of Years
ERTP=57 days

SFWMM Model Run Results: Hydroperiod

Change in NP-205 Discontinuous Hydroperiod with implementation of ERTP. Blue bars represent the number of days in which the NP-205 hydroperiod would increase or decrease as compared with hydroperiods under IOP .

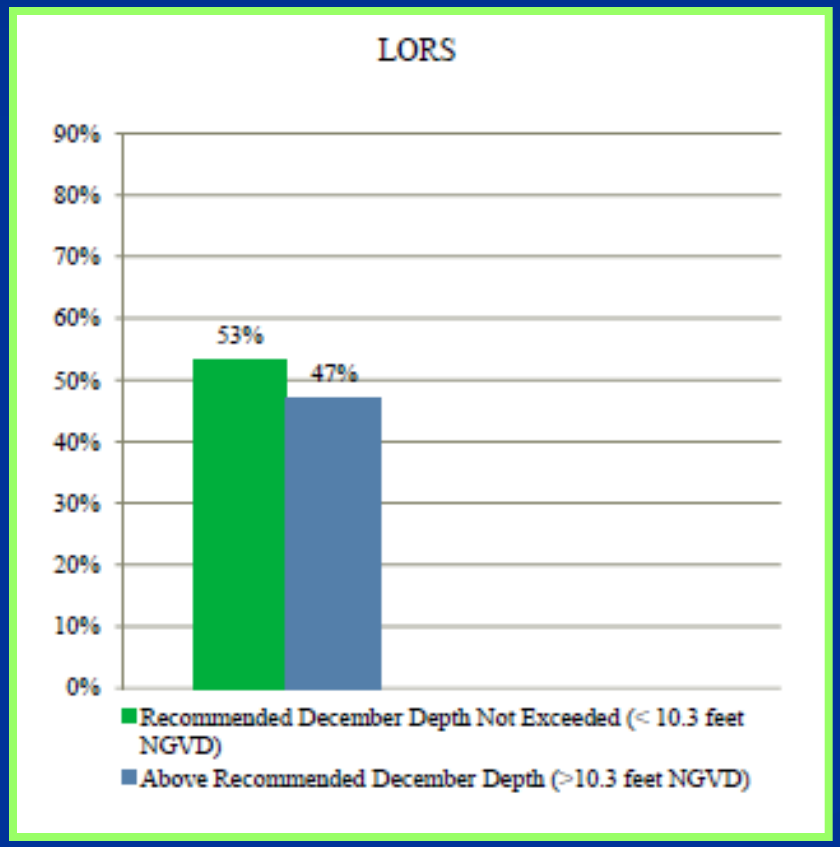


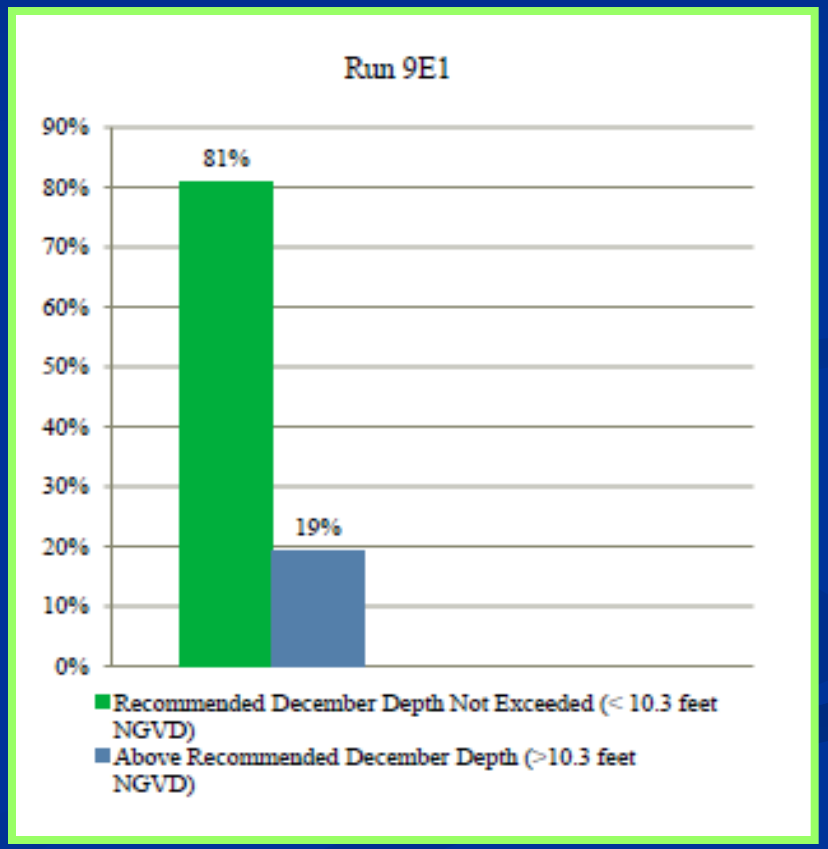
Increase: 33% of Years Decrease: 42% of Years No Change: 25% of Years

Total Increase in Hydroperiod for 36 Year POR= 15 days (0.02%)

SFWMM Model Run Results: Tree Islands

Percentage of Years in which Water Levels (WCA-3AVG) were below 10.3 feet NGVD by December 31 in WCA-3A. (N=36)

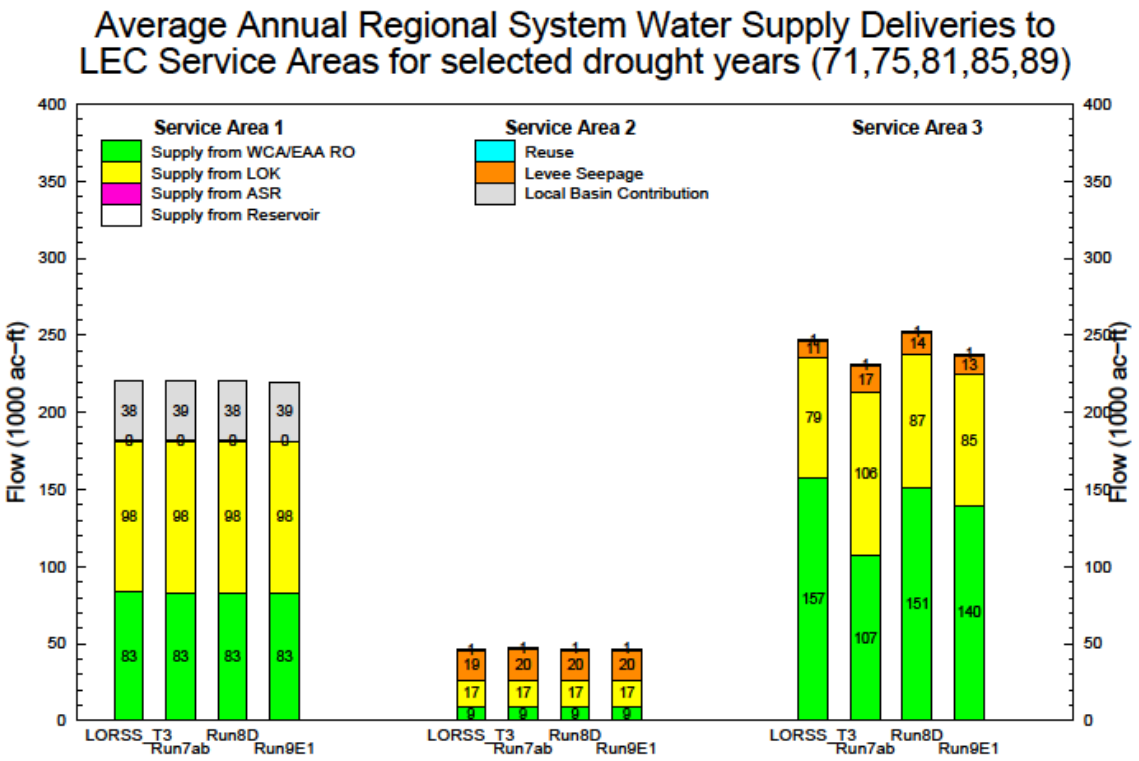




Water Supply

- An assessment of Water Supply performance was included with the evaluation of Alternatives

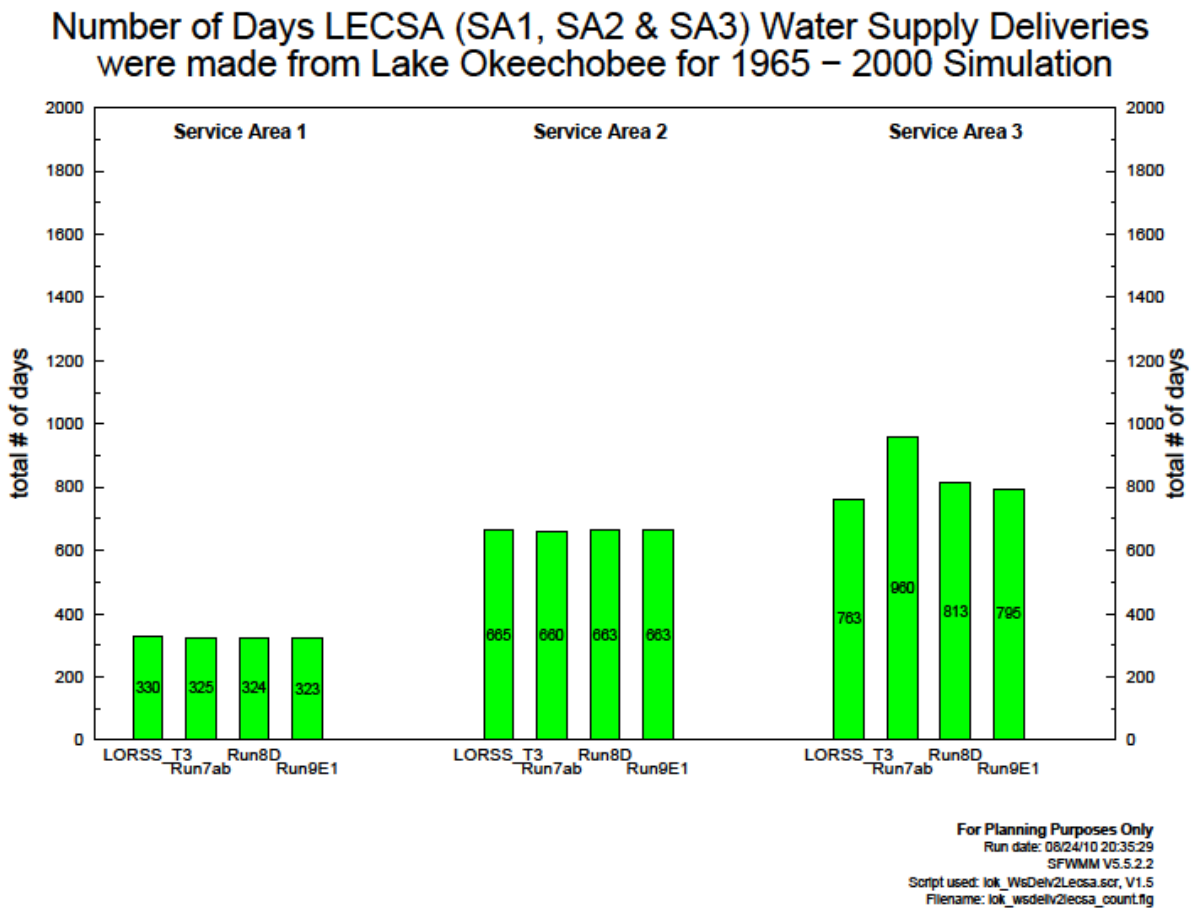
SFWMM Model Run Results: Water Supply



LECSA3 Water Supply from Lake Okeechobee:

Run7ab: + 34%
Run8D: + 10%
Run9E1: + 8%

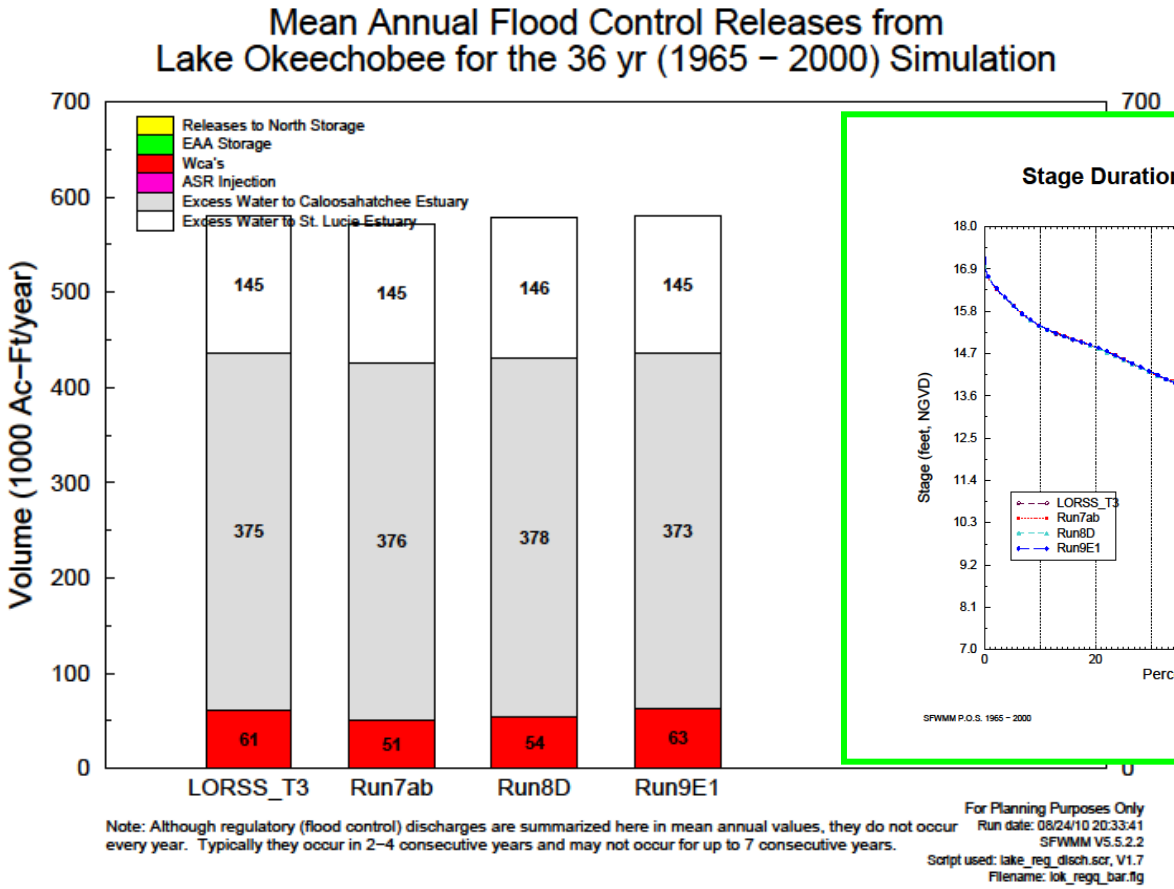
SFWMM Model Run Results: Water Supply

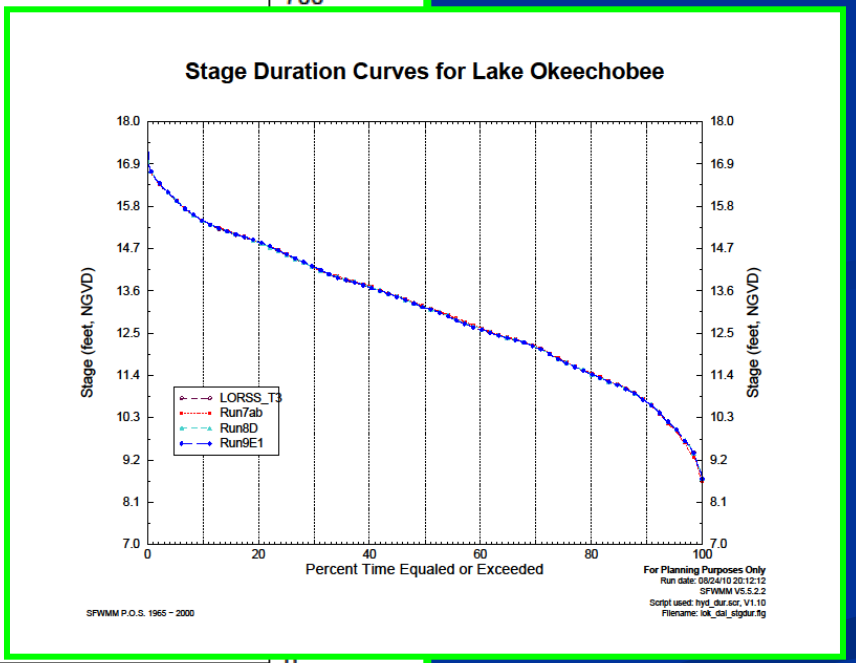


LECSA3 Water Supply from Lake Okeechobee:

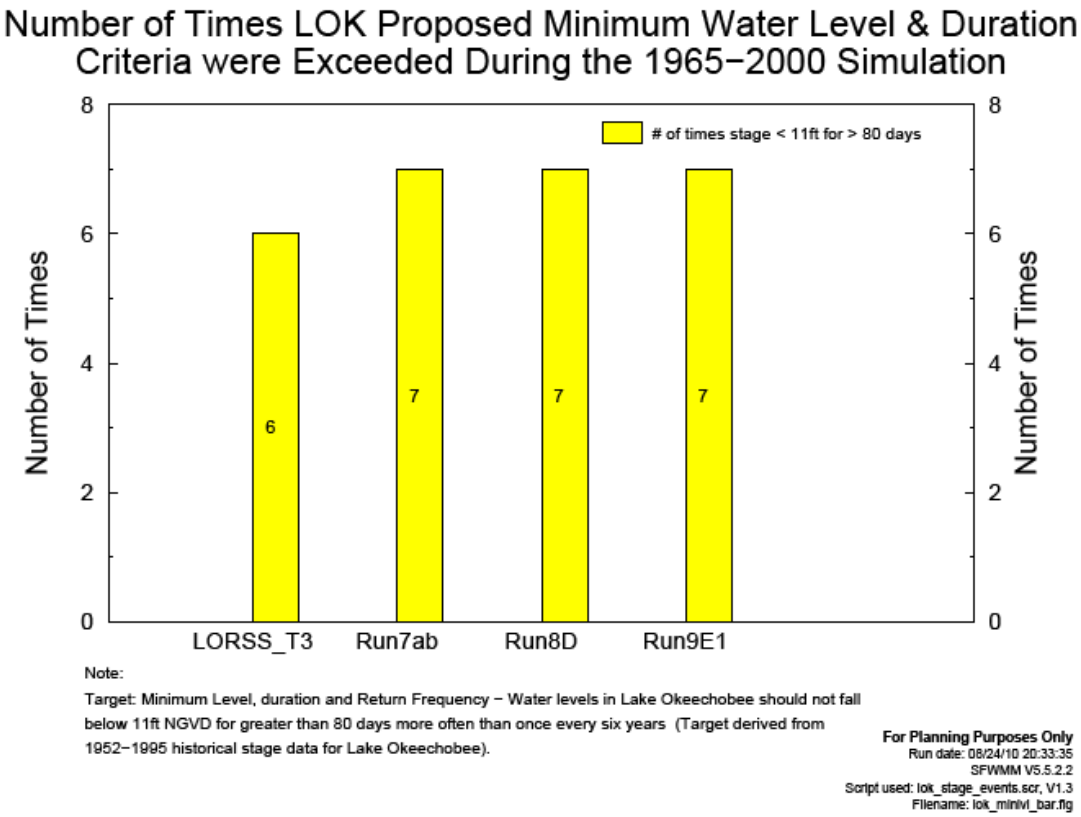
Run7ab: + 26%
Run8D: + 7%
Run9E1: + 4%

SFWMM Model Run Results: Lake O.





SFWMM Model Run Results: Lake O.

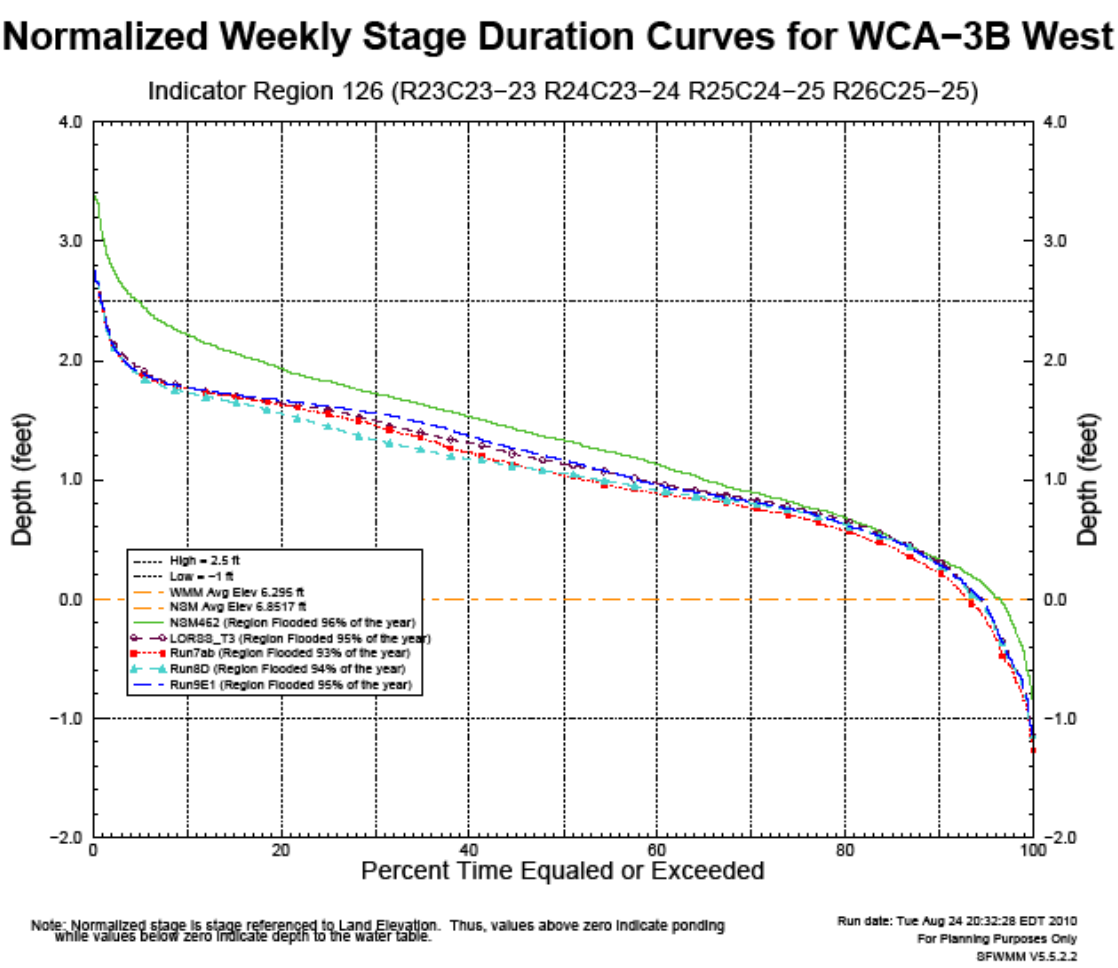


Lake Okeechobee stage below 11 ft., May-July 1971:

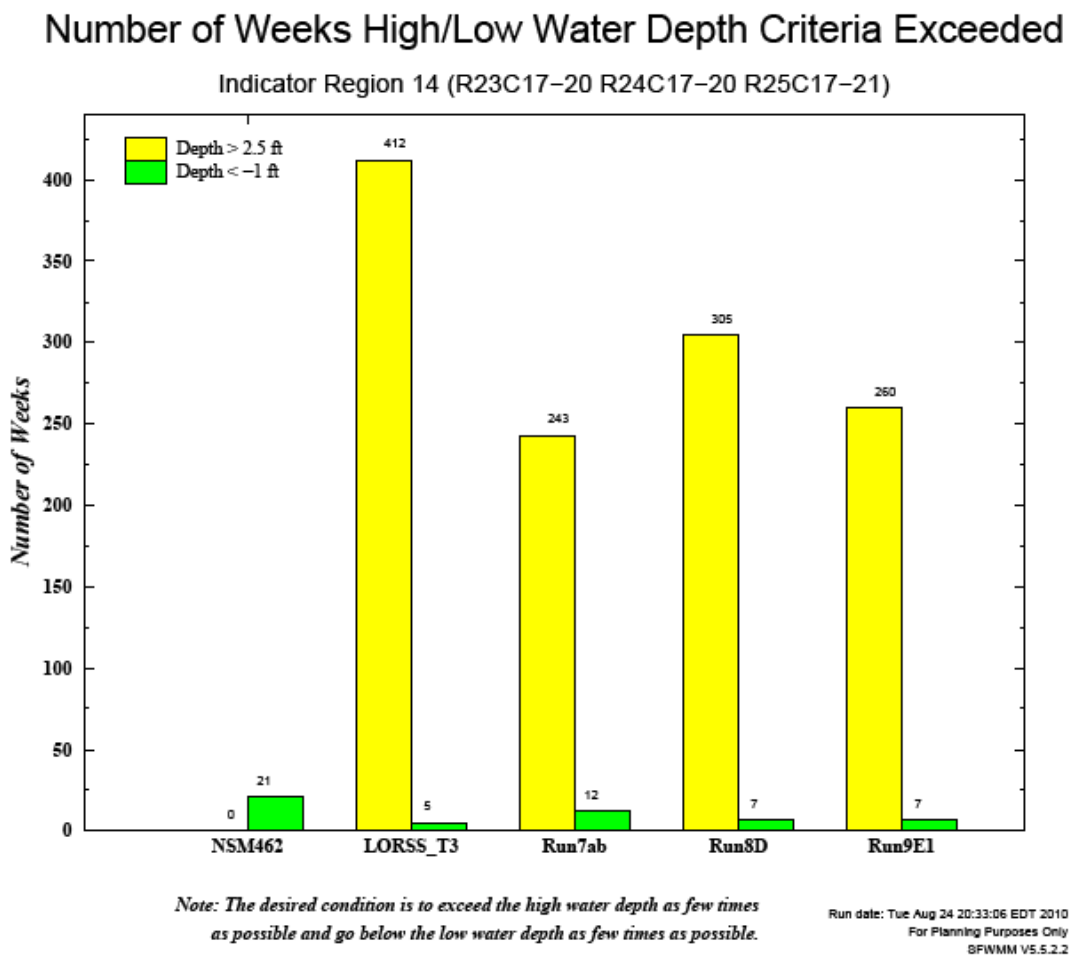
LORSS: 74/77 days (max. stage 11.02)

Run9E1: 80 days

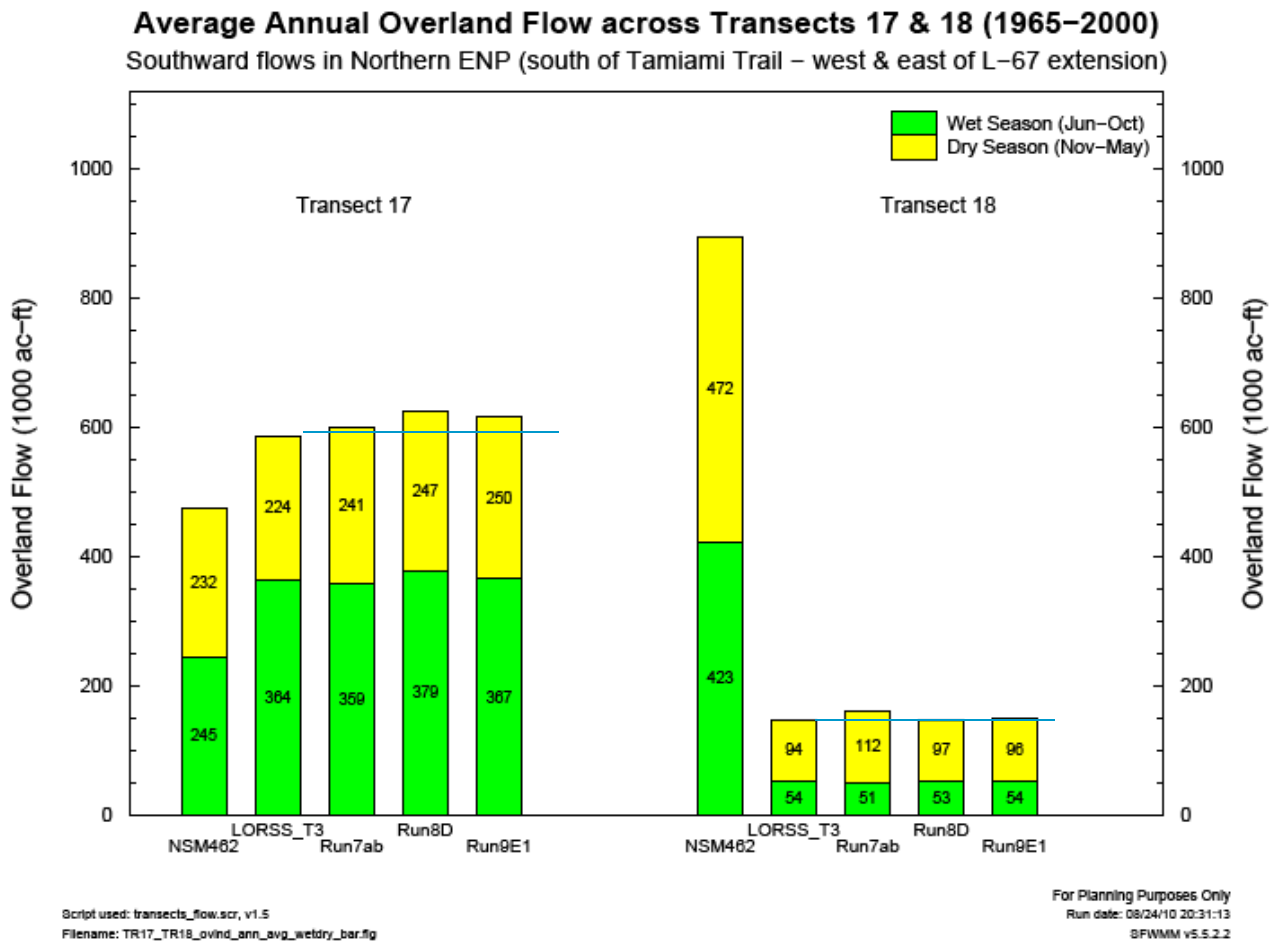
SFWMM Model Run Results: WCA-3B



SFWMM Model Run Results: WCA-3A



SFWMM Model Run Results: ENP Inflow



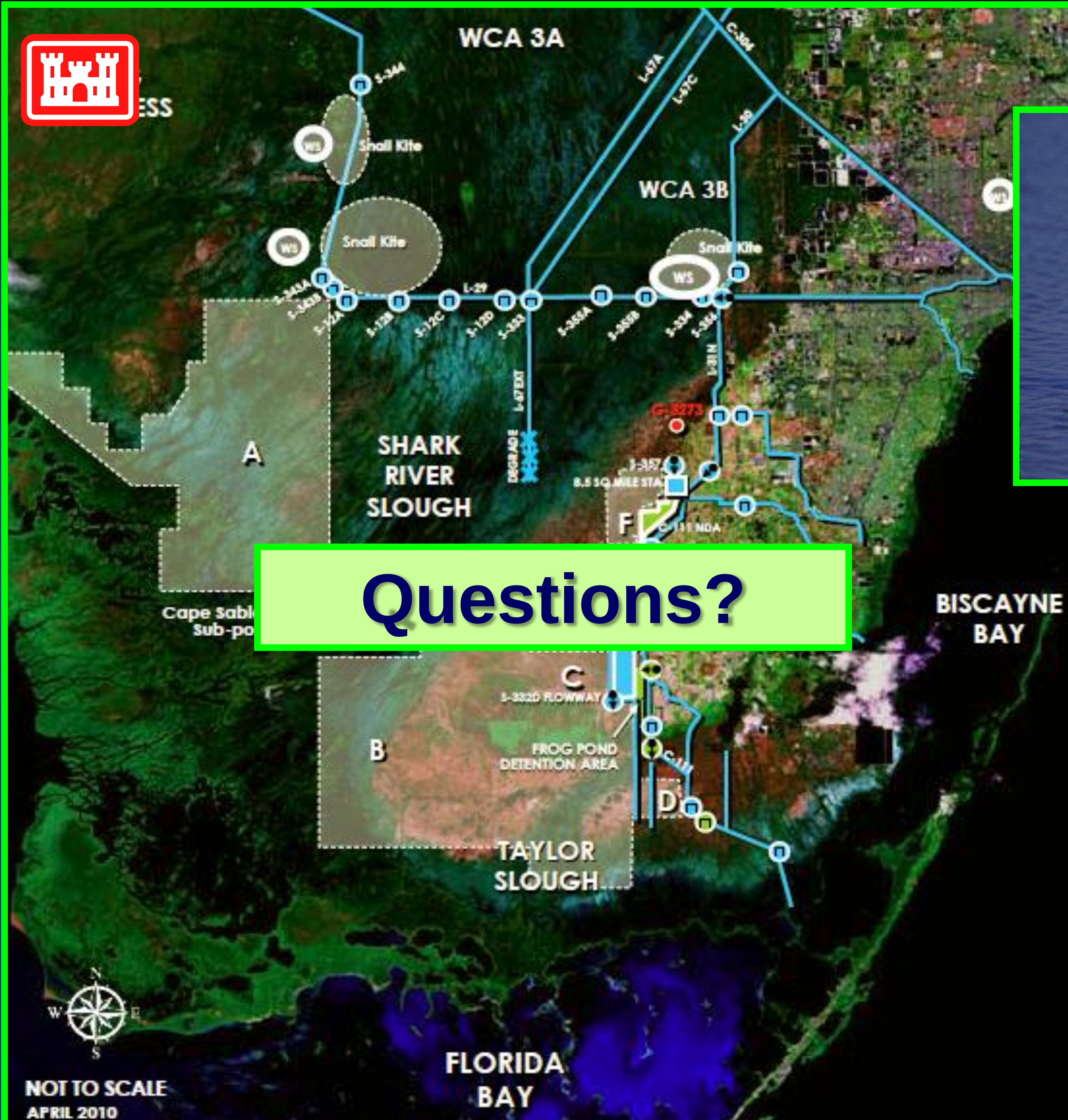
Water Quality

- Water quality analysis has been conducted on all alternatives
- Water Quality was not part of plan formulation nor was it used to choose the selected plan
- Special TOC meeting October 19 to discuss the results of the water quality analysis
- ERTP water quality information has been made available to the TOC

ERTP Path Forward

- 19 OCT: TOC Briefing
- 22 OCT: Submit BA to FWS
- 17 NOV: Receive BO from FWS
- 31 DEC: Draft EIS published in Federal Register
- JAN 2011: Public Meeting for Draft EIS
- May 2011: Final EIS

Questions?


WCA 3A
WCA 3B
Snail Kite
Snail Kite
Snail Kite
WS
WS
WS
L-29
SHARK
RIVER
SLOUGH
A
B
C
D
F
DEGRADE
S-332D FLOWWAY
FROG POND
DETENTION AREA
TAYLOR
SLOUGH
BISCAYNE
BAY
FLORIDA
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APRIL 2010